Figure 1.

Figure 2. Reaction scheme 1.

Figure 3. Reaction scheme 2.

Figure 4. Reaction scheme 3.

Figure 5. Reaction scheme 3 (Cont'd).

Figure 6. Reaction scheme 4.

Figure 7 Reaction scheme 5.

Figure 8. Reaction scheme 6.

Figure 9. Reaction scheme 6 (Cont'd).

45 R = CH₃O46 R = NHCOCF₃47 R = CN

48 R = CH₃O 49 R = NHCOCF₃ 50 R = CN

55 55 56

 $R = CH_3O$ $R = NHCOCF_3$ R = CN

51 R = CH₃O
52 R = NHCOCF₃
53 R = CN

Figure 10. Reaction scheme 7.

- i - e -) - - - i

Figure 11. Reaction scheme 8.

* 5-(R)-Isomers were subjected to the same conversions.

Figure 12. Chart 1. Stereochemistry of 5'-C-Branched Thymidines: NOE Experiments

5'-(R)-isomer Saturate 5'-H, NOE enhancement for 3'-H: 6.6%

5'-(R)-isomer Saturate 3'-H, NOE enhancement for 5'-H: 6.3%

5'-(R)-isomer Saturate 3'-H, NOE Enhancement for 5'-H: 4.8%

5'-(S)-isomer Saturate 3'-H, No NOE enhancement for 5'-H

Figure 13. Reaction scheme 9.

TBDMSM = t-butyldimethylsiloxymethyl

Figure 14. Reaction scheme 10.

MPM = p-methoxybenzyl